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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,253	10/18/2001	Takefumi Nagata	Q66677	5979
<div>7590 06/15/2007</div> <div>SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3202</div>				
			EXAMINER DANG, DUY M	
			ART UNIT 2624	PAPER NUMBER
			MAIL DATE 06/15/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/981,253

Applicant(s)

NAGATA ET AL.

Examiner

Duy M. Dang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. Applicant's amendment filed on March 1, 2007 has been entered and made of record.

Response to Arguments

2. Applicant's arguments filed on March 1, 2007 have been fully considered but they are not persuasive.

In reply to Applicant's argument set forth at pages 5-6 of the response filed on March 1, 2007 with regard Nakazawa (USPN 5,319,719 referred as Nakazawa hereinafter) applied to the rejection of claims 1 and 3 under section 35 USC 102(b), the examiner disagrees and the reasons as follows:

(i)First, claimed "high density range" is defined as "lung areas" and "low density range" is defined as "mediastinum" according to Applicant's disclosed specification page 2 lines 1-3. In response to this, figure 19 in Nakazawa illustrates these claimed features. Specifically, "high transmission ratio" is a mediastinum and therefore refers to claimed "low density range", and "low transmission ratio" areas are lung areas and therefore refer to claimed "high density range".

(ii)Second, Nakazawa teaches "*Since the signal in the low frequency area is decreased...without decrease contrast (sharpness) of the high spatial frequency area, a portion of an object through which the radioactive ray can be easily transmitted, and a portion of the object which the radioactive rays can not easily be transmitted, can be reproduced so that both can be easily observed at the same time*" (see column 4 lines 57-68), "*unsharp mask signals corresponding to components of ultra-low spatial frequency for image signals of an original are obtained...dynamic range can be compressed by this processing, without taking any action*

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on the contrast of the signals corresponding to the detailed structures” (see column 12 lines 21-32), and “*dynamic compression processing (unsharpness mask processing) using the above-mentioned unsharpness mask signals*” (see column 15 lines 19-22). This concludes that Nakazawa applied unsharpness mask processing or dynamic compression processing to his/her low frequency area and his/her high frequency area is not effective by the dynamic compression processing.

(iii) Lastly, in view of (i) and (ii) above, Nakazawa does teach applying dynamic compression to portion having high density range and uneffecting the low density range.

In reply to Applicant’s argument set forth at pages 6-7 of the response filed on March 1, 2007 with regard to the combination of Nakazawa and Tsuchino applied to the rejection of claims 2 and 4 under section 35 USC 103(a), combination of Nakazawa, Wang and Tsuchino applied to the rejection of claims 6-9 under section 35 USC 103(a), it is noted that Applicant has relied on the arguments applied to the rejection of claims 1 and 3. Therefore, the examiner’s response as set forth above is incorporated herein.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakazawa et al. (USPN 5,319,719. Referred as Nakazawa hereinafter).

The advanced statements set forth in the preceding paragraph 2 are incorporated herein.

The advanced statements set forth in paragraph 3 of the previous Office action mailed on August 22, 2005 is incorporated herein.

With regard to the newly added features of “wherein the chest tomographic image includes a low density range that is unaffected by the compression of the high density range” that are recited in claims 1 and 3, Nakazawa further teaches these claimed features as mentioned in equations 1-3 denoted at column 14 lines 30-45. This interpretation is consistent with applicant’s disclosed page 7 lines 4-6 of the specification.

Regarding the newly added claim 10, Nakazawa further teaches wherein only the high density range is compressed (See discussion set forth in paragraph 2 above. Specifically, unsharpness mask processing or dynamic compression processing applies to low frequency area which refers to claimed “high density range”).

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazawa in view of Tsuchino et al. (USPN 5,493,622. Referred as Tsuchino hereinafter).

The advanced statements set forth in the preceding paragraph 2 are incorporated herein.

The advanced statements set forth in paragraph 5 of the previous Office action mailed on August 22, 2005 is incorporated herein.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazawa in view of Wang et al. (USPN 6,424,730. Referred as Wang hereinafter).

The advanced statements set forth in the preceding paragraph 2 are incorporated herein.

The advanced statements set forth in paragraph 7 of the previous Office action mailed on August 22, 2005 is incorporated herein.

With regard to the newly added features of “wherein the chest tomographic image includes a low density range that is unaffected by the compression of the high density range” that are recited in claim 5, Nakazawa further teaches these claimed features as mentioned in equations 1-3 denoted at column 14 lines 30-45 (refer to right term comprising beta, A and Qus of the equations). This interpretation is consistent with applicant’s disclosed page 7 lines 4-6 of the specification.

8. Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakazawa in view of Wang as applied to claim 5 above, and further in view of Tsuchino.

The advanced statements set forth in the preceding paragraph 2 are incorporated herein.

The advanced statements set forth in paragraph 9 of the previous Office action mailed on August 22, 2005 is incorporated herein.

Allowable Subject Matter

9. Claims 11-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Nakazawa, Wang, and Tsuchino either single or in combination fails to teach “carrying out tone conversion processing on the image data which has been processed by frequency enhancing processing” as recited in claim 11, and “wherein a degree of the dynamic range compression processing is changed in accordance with a degree of the tone conversion processing” as recited in claim 12.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy M. Dang whose telephone number is 571-272-7389. The examiner can normally be reached on Monday to Friday from 6:00AM to 2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on 571-272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

dmd
6/07


DUY M. DANG
PRIMARY EXAMINER